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REMARKS

Claims 1-21 are pending in the current application. In the above amendment, claim 7 is amended to more particularly point out that which Applicants' regard as their invention. In the Office Action dated December 30, 2003 ("Office Action"), the Examiner objected to claims 7, 8, and 10 as being of improper dependent form under 37 C.F.R. 1.75(c), rejected claims 1-5, 7-16, 18, 19, and 21 under 35 U.S.C. § 103(a) as being unpatentable over Hirokazu et al., JP 04-009666 ("Hirokazu"), in view of Franzen, U.S. Patent No. 5,770,860 ("Franzen"), or Balch, U.S. Patent No. 6,083,763 ("Balch"), or Vuong, U.S. Patent No. 6,448,089 ("Vuong"), rejected claim 6 under 35 USC §103(a) as being unpatentable over Hirokazu in view of Franzen, Balch, or Vuong in further view of Halbartschlager et al., U.S. Patent No. 3,700,089 ("Halbartschlager"), or Runyon et al., U.S. Patent No. 5,101,975 ("Runyon"), or Kauhaniemi, U.S. Patent No. 5,880,829 ("Kauhaniemi"), and rejected claims 17 and 20 under 35 USC §103(a) as being unpatentable over Hirokazu in view of Franzen or Balch or Vuong in further view of Haines, U.S. Patent No. 3,924,746. Applicants' representative respectfully traverses the 37 C.F.R. 1.75(c) objections of claims 7, 8, and 10 and the 35 USC §103(a) rejections of claims 1-21.

Applicants' representative would like to respectfully observe, prior to beginning a detailed response, that although the Examiner has, in a previous office action, thoroughly read the current application, and demonstrated a very good understanding of the claimed invention, the Examiner appears to attribute many characteristics and features to the cited references, particularly Hirokazu, that cannot be found in these references. Applicants' representative appreciates the Examiner's efforts in reviewing and offering corrections for the current application, but believes that the Examiner has fundamentally misinterpreted Hirokazu, for reasons detailed below.

37 C.F.R. 1.75(c)-Based Objections

First, with regard to the Examiner's objections to claims 7, 8, and 10, Applicants' representative, Applicants' representative notes that the Examiner feels that "it appears that the regularly spaced features are being attributed to different

functionalities and do not structurally further limit the base claim." Applicants' representative respectfully disagrees. All three dependent claims further qualify the phrase "regularly spaced features" introduced in claim 5. Many different types of features are possible. Claim 7 claims "optical features that can be detected by an optical detector or sensor." An optical feature needs to be optically distinguishable from the pocket surface by an optical sensing device, and thus may include areas of different reflectivity, visually detectable markings, and perhaps apertures in a system in which a microarray strip is backlit. However, an optical feature would most likely not include a raised feature of the same material and reflectivity of the pocket strip, as such a feature would not be optically detectable by an optical detector or sensor. However, a raised feature would be included in the scope of claim 8, which qualifies "regularly spaced features that engage with complementary features of a mechanical translation and positioning mechanism." All three dependent claims 7, 8, and 10 further qualify claim 5. Furthermore, Applicants' representative does not understand the essence of the Examiner's objection, since it is well known that elements may be claimed using functional language. A "means + function" claim is a classic example of such a claim.

35 USC §103(a) Obviousness-Type Rejections

With regard to the 35 USC §103(a) rejections of claims 1-21, Applicants' representative notes that many of the cited references are identical to those cited in a previous office action. In particular, the Examiner's main cited reference remains Hirokazu. However, as pointed out in a previous response, Hirokazu is quite unrelated art. Hirokazu's disclosed 96-well-microplate packaging system consists primarily of a microplate ((a) in Figure 1) vacuum-sealed in a plastic bag (b in Figure 1 of Hirokazu). In a second embodiment shown in Hirokazu, a 16-well partitions of a 96-well microplate are individually vacuum sealed in a plastic bag, and each 16-well is also covered by a separate film sheet or adhesive tape ((h) in Figure 2 of Hirokazu). Microplates are rigid plastic or glass slabs, of rather large dimensions, with discrete wells arrayed on one side. Microplates are used to hold sample solutions in the wells, both for chemical synthesis and analysis steps, and as a container that can be used for spectrophotometric analysis of sample solutions. Indeed, Hirokazu describes "a substance capable of reacting with the

test material is solidified on the inner surfaces of the wells of the microplate, after which the wells are filled with a preservative to which an additive has been added" (Hirokazu, page 3, section 4).

Please contrast the vacuum-packaged 96-well microplate disclosed by Hirokazu with Applicants' invention claimed in claim 1:

1. A microarray *strip* containing *microarrays*, the *microarray strip* comprising:
a pocket strip having a number of pockets;
a number of microarrays, each pocket of the pocket strip containing a *microarray*; and
a cover strip bonded to the pocket strip to create sealed chambers, *each sealed chamber containing a microarray*. (emphasis added)

First, the Webster's New World Dictionary defines the word "strip" as "a long, narrow piece, as of land, ribbon, wood, etc." Consider the microarray strip 200 comprising a pocket strip 202 and a cover strip 204 in Figure 2 of the current application. In each case, the term "strip" appropriately describes a long, narrow piece of molded plastic, plastic film, or a combination of a pocket strip and cover strip. Please contrast the strips in Figure 2 of the current application with Hirokazu's 96-well microplate shown in Figures 1 and 2 of Hirokazu. The 96-well microplate is certainly not a strip, in any sense of the word. It is a rectangular, rigid, plastic or glass plate. Adhesive strips are used to cover sections of the microplate, to be sure, but claim 1 does not merely claim a cover strip.

Second, of the four cited references for rejection of claim 1, only Balch discloses anything that could be considered to be a microarray, as that term is clearly defined in the current application, and as that term is well understood in biological and chemical sciences. However, the array (refereed to as a biosite in Balch) disclosed in Balch is not packaged, but is instead deposited on an external surface of a reaction chamber, as clearly shown in Figure 4 of Balch. Hirokazu, Franzen, and Vuong are all directed to various microtiter plate, or microplate applications. Claim 1 clearly claims "a number of microarrays" placed singly into pockets of a microarray strip. Nothing disclosed in the four cited references teaches, mentions, or suggests packaging of even a single microarray, let alone individually packaging each of a number of microarrays in a

common package.

According to the MPEP §2143:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (emphasis added)

In particular, each element of the claim must be taught or suggested, and a teaching or suggestion for the combination must be found in the prior art. In Applicants' representative's opinion, a *prima facie* case of obviousness has not been established. Neither strips nor packaging of microarrays are taught, mentioned, or suggested in any of the four cited references. No combination of Hirokazu, Franzen, Balch, and Vuong produces the microarray strip claimed in claim 1.

As stated in *In re Dembiczak*, 175 F.3d 994, 998, 50 USPQ 1614, 1616 (Fed. Cir. 1999):

Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. See, e.g., C.R. Bard, Inc. v. M3 Sys., Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998) ... Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight. See, e.g., Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1138, 227 USPQ 543, 547 (Fed. Cir. 1985) ("The invention must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time."). In this case, the Board fell into the hindsight trap.

We have noted that evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, see Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), Para- Ordinance Mfg. v. SGS Imports Intern., Inc., 73 F.3d 1085, 1088, 37 USPQ2d 1237, 1240 (Fed. Cir. 1995), although "the suggestion more often comes from the teachings of the

pertinent references," Rouffet, 149 F.3d at 1355, 47 USPQ2d at 1456. The range of sources available, however, does not diminish the requirement for actual evidence. That is, the showing must be clear and particular. See, e.g., C.R. Bard, 157 F.3d at 1352, 48 USPQ2d at 1232. Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence."

In the Office Action, the Examiner states that "it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the strip of Hirokazu et al. to package a microplate with each well containing microarrays for storage and transportation to accommodate the evolution of microplates in pursuit of high throughput as taught by Franzen, Vuong, and Balch." The "evolution of microplates" has nothing at all to do with packaging of microarrays. Hirokazu does not teach, mention, or suggest packaging or a pocket strip. Although it might occur to someone to place microarrays within rigid, microplate-like substrates for exposing the microarrays to sample solutions, it is hard to imagine why anyone would choose to package a flat, thin, normally square or rectangular microarray into the hemispherical well of the microplates in the cited references, particularly in view of the fact that microarrays are normally significantly larger, in width and length, than the assumed and ordinarily encountered diameters of the microplate wells. Even if tiny microarrays could be inserted into the hemispherical wells of the disclosed microplate, the tiny microarrays would not be securely held in place, but would easily move and even tumble within the well, since no more than four points on the surface of the microarray could ever simultaneously contact the curved surface of the microplate well. The Examiner's suggestion for combining Hirokazu, Franzen, Vuong, and Balch does not meet the above-quoted test for a suggestion for combining references for a 35 USC §103(a) obviousness-type rejection.

The Examiner's 35 USC §103(a) rejection of claims 1-5, 7-16, 18, 19, and 21 begins with the statement: "Hirokazu et al. disclose a strip containing a number of microplates (a) (see ABSTRACTS; FIGS. 1 and 2). The strip comprises a pocket strip (c) with a number of pockets, which has structural features including shape, configuration, and form for positioning and orienting a microplate within the pocket since each pocket contains a microplate." As discussed above, the only strip disclosed in Hirokazu is an adhesive strip or film used to cover a 16-well section of a microplate ((h) in Figure 2). Hirokazu cannot possibly disclose a strip containing a number of

microplates, because both of Hirokazu's disclosed embodiments comprise a single microplate ((a) in Figures 1 and 2). Hirokazu states that "Fig. 1 is a schematic view of an entire vacuum-packed microplate" (Hirokazu, page 3, section 4) and states that "Fig. 2 is a schematic diagram of a partitioned-type microplate that has been vacuum packed (Hirokazu, page 4, section 4). The object labeled "(c)" in Figure 1 is "the end (c) of the bag" (Hirokazu, page 3, section 4) and has nothing to do with a pocket strip.

Similar misstatements, too numerous to enumerate in this response, occur throughout the statement of rejection. In fact – as simply observed above, Hirokazu discloses two embodiments for packing a single microplate in a single plastic bag and vacuum sealing the plastic bag. Hirokazu makes no mention of packaging multiple microplates, pocket strips, microarrays, or any of the other elements of claim 1. Hirokazu is simply completely unrelated to the invention claimed in claims 1-21.

Claim 18 includes much of the language of claim 1, including a "pocket strip," a "cover strip," and "microarrays," as is not obvious in view of Hirokazu, Franzen, Vuong, and Balch for the same reasons that claim 1 is not obvious. Claims 1 and 18 are the only two independent claims, and therefore the remaining dependent claims are also not obvious.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,
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